REMARKS

Applicant thanks the Examiner for the careful consideration given to this application. Reconsideration is requested in view of the amendments above and the following remarks.

Claims 1-15 are pending in this application. Claims 1 and 9 are independent claims. Claims 2, 9, and 13 are amended. Claim 16-18 were previously canceled. Claim 2 has been amended to correct punctuation, Claim 9 has been amended to correct a grammatical error, and the amendment to Claim 13 will be discussed below; it is respectfully submitted that these amendments are supported by the application as originally filed.

Claim Rejections Under 35 U.S.C. §103

At pages 2-3 of the Office Action, Claims 1-3 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over "Overcoming peak-to-peak average power ratio issues in OFDM via carrier-interferometry codes," 2001, IEEE, pages 660-663 (hereinafter "Wiegandt et al.") in view of U.S. Patent Publication No. 2003/0064690 to Kasapi (hereinafter "Kasapi"). At page 3 of the Office Action, Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wiegandt et al. in view of Kasapi as applied to claim 1, and in further view of U.S. Patent Publication No. 2002/0159425 to Uesugi et al. (hereinafter "Uesugi et al."). At pages 4-5 of the Office Action, Claims 5 and 7-15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wiegandt et al. in view of Kasapi as applied to claims 1 and 6, and in further view of U.S. Patent Publication No. 2003/0103445 to Steer et al. (hereinafter "Steer et al."). These rejections are respectfully traversed for at least the following reasons.

Among other things, Claim 1 recites, "a CI coder adapted to encode at least one data sequence onto a CI code to produce at least one data-bearing code vector and to adjust subcarrier weights." The Office Action, at page 2, acknowledges that Wiegandt et al. fails to address the adjustment of subcarrier weights. However, at page 3, the Office Action asserts that this shortcoming of Wiegandt et al. is addressed by Kasapi (no specific reference(s) provided in Office Action). Applicant respectfully disagrees.

Kasapi, noting, e.g., the Abstract, discusses how "each of the sub-carriers is dynamically modified by a set of complex weights to ensure that each of the sub-carriers of the wireless

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communication channel propagates along a different physical path to the receiver." As noted in Figs. 3 and 4 and at paragraphs 33-44 of Kasapi, this is carried out by sub-carrier diversity agent 216. As discussed at paragraph 34, splitter module 302 and modulation module 304 function to encode and modulate the data onto the various antenna paths. Therefore, in Kasapi, the weighting of the sub-carriers is not disclosed as being related to the encoding function, as presently claimed. It also has nothing to do with CI coding, as in Claim 1.

For at least these reasons, it is respectfully submitted that Claim 1 and its dependent claims (Claims 2-8) are allowable over the cited references.

It is further noted that the rejections of Claims 9-15 rely on this same teaching (Claim 9 includes the recitation of "a CI decoder adapted to decode at least one received data sequence impressed onto the CI code vector and to adjust subcarrier weights") and are, therefore, allowable for at least the same reasons.

Attention is now directed to Claims 4 and 12. Claim 4 recites, "at least one of the modulator and the CI coder is adapted to scramble CI codes generated by the CI coder," and Claim 12 recites, "at least one of the demodulator and the CI decoder is adapted to descramble CI codes." The Office Action, at page 3, acknowledges that the combination of Wiegandt et al. and Kasapi fails to teach such scrambling/descrambling and relies on Uesugi et al., Fig. 6, for such a teaching. Fig. 6 of Uesugi et al. shows the use of spreading codes to spread data by a factor of M in modules 102-1 to 102-N. However, nowhere does Uesugi et al. disclose or suggest the use of scrambling and/or descrambling (as opposed to spreading/despreading). Therefore, Applicant respectfully submits that, for at least this reason, Claims 4 and 12 are allowable over the cited references.

Attention is now directed to Claims 5 and 13. Claim 5 recites, "at least one of the modulator and the CI coder is adapted to provide frequency variations to the subcarriers," and Claim 13, as amended, recites, "at least one of the demodulator and the CI decoder is adapted to compensate for subcarrier frequency variations imparted to one or more of the subcarriers by a transmitter." In other words, Claim 13 has been amended to recite that the subcarrier frequency variations to be compensated correspond to frequency variations imparted by a transmitter. The Office Action, at page 4, relies on Steer et al. for a teaching of the imparting of such frequency variations to subcarriers, specifically referring to paragraph 47 of Steer et al. (the Office Action

acknowledges that the other cited references fail to disclose or suggest this). Steer et al., at paragraph 47, states, "the pattern of sub-carriers may also be changed dynamically to support, for example, changes in the traffic flow in the uplink and downlink directions." Paragraph 47 further discusses how traffic controller 108 "may measure the traffic flow in each direction and act to increase or decrease the number of sub-carriers allocated to each direction." Paragraph 47 also discusses that the "allocation of sub-carriers may also be changed regularly, in a predetermined pseudo-random pattern." Applicant notes, however, that all of these are addressing allocation of fixed sub-carriers, not introducing frequency variations to the sub-carriers, as claimed. Therefore, Applicants respectfully submit that Steer et al. fails to disclose or suggest this element of Claims 5 and 13 and that, therefore, Claims 5 and 13 are allowable over the cited references for at least this reason.

Finally, attention is directed to Claim 8, which is addressed at page 4 of the Office Action. The Office Action recites, "Wiegandt et al. is silent on whether the CI coding is non-uniform across the plurality of subcarriers. However, the CI coding is performed to ensure separability between bit k and (N-1) other bits, non-uniform coding would have been obvious to increase separability between transmitted bits." Applicant is unable to understand this reasoning and believe that this paragraph is merely conclusory and fails to present a *prima facie* case of obviousness. Applicant notes that Claim 8 recites that "the CI coder is adapted to perform at least one CI coding algorithm configured to non-uniformly spread the at least one data sequence across the plurality of subcarriers." Applicant does not understand how the cited references teach or suggest non-uniform spreading and refer to the present application at page 27, last paragraph, through page 29, second paragraph (corresponding to paragraphs 122-127 of the corresponding published application, U.S. Patent Application Publication No. 2004/0100897) for a discussion of non-uniform spreading. For at least these reasons, Applicant respectfully submits that Claim 8 is also allowable over the cited references.

Disclaimer

Applicant may not have presented all possible arguments or have refuted the characterizations of either the claims or the prior art as found in the Office Action. However, the

lack of such arguments or refutations is not intended to act as a waiver of such arguments or as concurrence with such characterizations.

CONCLUSION

In view of the above, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

Applicant believes no fee is due with this response other than any fee that may be specified in an accompanying paper. However, if any further fee is due (or if such paper is inadvertently omitted), please charge our Deposit Account No. 22-0185, under Order No. 27592-00404-US3, from which the undersigned is authorized to draw.

Dated: April 14, 2009   Respectfully submitted,

Electronic signature: /Jeffrey W. Gluck/
Jeffrey W. Gluck
    Registration No.: 44,457
CONNOLLY BOVE LODGE & HUTZ LLP
1875 Eye Street, NW
Suite 1100
Washington, DC 20006
(202) 331-7111
(202) 572-0322 (Direct Dial)
(202) 293-6229 (Fax)
Attorneys for Applicant